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## Patent Abstracts of Japan

PUBLICATION NUMBER : 04042983  
PUBLICATION DATE : 13-02-92

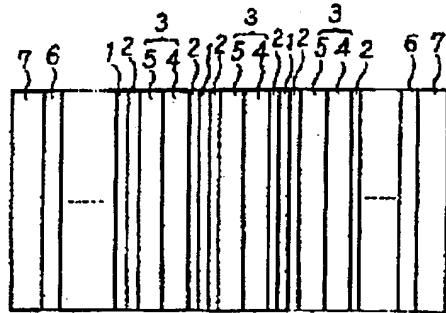
APPLICATION DATE : 06-06-90  
APPLICATION NUMBER : 02147897

APPLICANT : FUJITSU LTD;

INVENTOR : FUJII TOSHIO;

INT.CL. : H01S 3/18 H01S 3/085

TITLE : PHOTOSEMICONDUCTOR DEVICE  
AND MANUFACTURE THEREOF



ABSTRACT : PURPOSE: To obtain a photosemiconductor device capable of responding to an optical pulse train of an ultrashort time and having excellent high frequency responding characteristic by incorporating broken gap type hetero structure in a first quantum well; layer formed with a two-dimensional exciter by a light to be operated and a second quantum well layer formed through a barrier layer.

CONSTITUTION: Since an InAs/GaSb quantum well layer 3 made of a broken gap type hetero junction InAs layer 4 and a GaSb layer 5 is formed adjacent to an InGaAsSb quantum well layer 1 formed with a two-dimensional exciter to be operated, electrons and holes excited by the layer 1 are momentarily recombined in a broken gap type hetero boundary to the layer 5. Accordingly, an ultrahigh speed operation can be performed not only in a low exciting state but also under a high exciting condition.

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